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TWO INTERESTING PLANTS ON MT. CARDIGAN, ORANGE, NEW HAMPSHIRE. Many interesting occurrences of plants are reported by Frank Seymour in his excellent Flora of New England. One of the most unusual was his discovery of *Carex capitata* L. on Mt. Cardigan in 1960 at an elevation of 3200 feet. In New Hampshire, *Carex capitata* is known otherwise only on Mt. Washington where a few small colonies of it occur in moist peaty moss at an elevation of 5000 feet. It does not grow on Mt. Katahdin but is found in Newfoundland and the arctic.

The report of it on Mt. Cardigan seemed so unlikely that the authors thought possibly some mistake had been made and decided to investigate. Accordingly in September, 1972 they climbed the mountain. Above 2500 feet ledges and bare rock were encountered but no unusual plants. The west side of the summit consists of large expanses of bare sloping rock with occasional patches of soil or clumps of dwarf trees. In this area a colony of *Carex capitata* was soon located. It was growing in dry open soil along with *Potentilla tridentata* Ait. Eventually 3 colonies were found in similar situations, the largest of which was 20 feet in diameter. The plant was in abundance in each colony and seemed to be more vigorous than on Mt. Washington.

All of the summit area was searched and eventually a small colony of *Carex Bigelowii* Torr. was located in a dry peaty area. It later developed that this plant had been found there by Steele in 1955 but not reported. Various plants that might be expected in such a mountainous situation were found but nothing else unusual. *Carex Bigelowii* is confined to alpine areas, except for this situation but has a wide distribution. It is common on the Presidential and Franconia Ranges and also occurs on The Twin Range, and on Mt. Moosilauke.

It is very difficult to account for the presence of these plants, especially *Carex capitata* which is rare even on Mt. Washington, and the authors cannot even agree between themselves as to the most likely explanation.

About 100 years ago there was a fire on Mt. Cardigan which was so spectacular that it was seen for miles and an eastern promotory received the name Firescrew. Presumably the fire drastically altered the environment, creating new open habitats thus providing a suitable site for *Carex capitata* which then seeded in. The difficulty with this hypothesis is that Mt. Washington is 50 miles to the northeast and it is hard to see how the fruits could have been transported. They are comparatively heavy and not windborne and, if eaten by birds, would presumably be digested, destroyed or lost. Furthermore the plant is of such limited occurrence on Mt. Washington that it seems too much of a coincidence to suppose that a bird had transported it to Cardigan, especially when there are many other suitable sites closer at hand. Even though *Carex Bigelowii* is a much commoner plant it is not easy to see how its fruits could have been transported.

Another explanation is that *Carex capitata* existed on Mt. Cardigan as a relic since the retreat of the glacier. There undoubtedly were ledges and probably small peaty openings where it might have survived. If this were the case, however, it is very difficult to explain why it or other more common arctic alpines are not found on some of the numerous apparently suitable sites on other mountains. The reason

it is not found in such situations is undoubtedly that it cannot withstand competition with other plants. It is very difficult to see how it could have survived on Cardigan for thousands of years as would have to be the case if it were a true glacial relic.

There is a third possibility, not very attractive, but not easy to disprove, and that is that some botanist for reasons best known to himself, transplanted the plants there from Mt. Washington. Two instances are known of transplants on Mt. Washington and there are many instances of plants being moved to lowland sites where they do not long persist. It is perhaps significant that although the plant is fairly conspicuous it was not discovered on Cardigan until Seymour found it in 1960.

It will be very difficult to decide positively among these possibilities. This article is being published partly so that some botanist 50 years from now can compare the distribution of the plants with their present state.

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